

fundamental determinations; using 400 stars, of which the majority were double stars observed by his father at Dorpat, he undertook an exhaustive investigation on the constant of precession and the proper motion of the solar system. The results were communicated to the Academy of St. Petersburg in November 1841, and printed in their Transactions. This memoir furnished the occasion of the Royal Astronomical Society's award of their Gold Medal in 1850, the author having been elected an Associate two years previously.

In 1852 he became a member of the St. Petersburg Academy of Sciences, and in 1862 succeeded his father as Director of the Pulkowa Observatory, with which institution his whole scientific life is identified. His work centred now, as before, chiefly on double stars and fundamental astronomy; but he took the greatest interest in geodetical investigations, and as consulting astronomer to the general staff and to the hydrographical department he was the chief adviser of the Russian Government in matters related to astronomy and geodesy. Co-operative enterprises found in him a zealous promoter, and with the great Zone Catalogue of the Astronomische Gesellschaft his name will always be associated.

The double stars of Otto Struve were naturally of a more difficult class than those of his father, the instruments being respectively a 15-inch and a 9.6-inch. The measures were collected and discussed by Professor Hussey in 1900. One of his stars, δ *Equulei*, has the shortest period (5.7 years) of any known visual binary. An interesting feature of Struve's work was his unusually large personal equation in the measurement of position angles of double stars; by experiments with artificial stars he was enabled to deduce satisfactory formulæ for correction.

A discussion of the measures of *Saturn's* rings, in which he introduced the nomenclature now used, led him to the conclusion that the inner ring is approaching the planet. This has not been confirmed by more recent measures.

In 1873 he was elected a Foreign Member of the Royal Society.

In 1889, on the fiftieth anniversary of the foundation of Pulkowa Observatory, he retired from the directorship, to which Bredichin was then appointed. The remainder of his life was spent at St. Petersburg, and latterly at Karlsruhe.

Struve died on the 14th of January 1905. He had been twice married, but his second wife predeceased him by some years. The astronomical tradition of the Struve family is worthily maintained by his son, Dr. Hermann Struve, who is an Associate and Gold Medallist of the Society.

PIETRO TACCHINI was born in 1838 at Modena. He graduated as a prizeman in Engineering at the Academy of Modena, and afterwards studied astronomy at the Observatory of Padua. At the early age of twenty-one years he was called to take

charge of the Observatory of his native city, but four years later left this position on being appointed to the staff of the Palermo Observatory. In 1879 he became Director of the Observatory of the Roman College and of the Central Bureau of Meteorology, and in this office he was for many years one of the central figures in Italian astronomy and spectroscopy. His principal interest was in solar physics; observations of the Sun were carried on regularly during practically the whole period of his scientific activity, and for thirty years he organised Italian eclipse expeditions as opportunity offered. He was one of the chief founders of the Società degli Spettroscopisti Italiani in 1872, and edited its *Memorie*, in which much of his own work was published.

In 1873, writing on the connection between solar prominences and the Aurora Borealis, he stated that the relationship was closer between these phenomena than between Sun-spots and the Aurora.

In 1874 he observed the transit of *Venus* in Bengal, and from his spectroscopic investigations inferred the existence on *Venus* of an atmosphere similar to our own.

In 1883 he went with Janssen to Caroline Island to observe the total solar eclipse, and made the discovery of *white* prominences; this was confirmed in the 1886 eclipse, when Tacchini observed a white prominence 150,000 miles in height.

He was elected an Associate of the Royal Astronomical Society in 1883, and was awarded the Rumford Medal of the Royal Society in 1888. In 1891 he was elected a Foreign Member of the Royal Society, and in the following year received the Janssen Medal of the Paris Academy.

His work as Director of the Meteorological Bureau was carried on with great activity, and to him is due the establishment of the Italian forecasting service.

Tacchini died at Spilamberto, in the province of Modena, on the 24th of March 1905.